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Catalog of the Borrowdale Collection

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The Borrowdale Collection

By bequest of the late William M. Borrowdale of Magdalena, New Mexico, there came to the State Museum in January, 1920, a large collection which the donor had gradually assembled from the time of his first arrival in New Mexico in the year 1880.

The collection comprises many articles of archaeological and ethnological value, including old Indian pottery, arrow heads, beads and charms, basketry, etc., but the part of the collection in which Mr. Borrowdale took especial pride was that consisting of edged weapons and firearms. The latter show an almost complete historical series from the Revolutionary period down to the present, besides a number of weapons of even earlier periods.

The Museum is especially fortunate to have had the help of Mr. F. S. Curtis, Jr., in preparing the catalog which is herewith presented. Mr. Curtis is a Yale graduate, headmaster of the boys' school at Los Alamos Ranch, and his expert knowledge on weapons has enabled him to make the catalog both accurate and readable.

THE DIRECTOR

Edged Weapons and Firearms

IN

The Borrowdale Collection.

PART I--EDGED WEAPONS.

3147—Hand made ax, probably old Spanish. The handle is modern.

3148—Fire ax of the model used by early American volunteer firemen.

3149—A cavalry sabre of the Empire of Napoleon I. Made at the famous arsenal at Klingenthal, it was issued from the depot at Versailles. Dated 1813, it may well have seen service at the battles of Leipsic and Waterloo. By its pattern it may probably have been made for Napoleon's German or Polish auxiliary cavalry, more probably German. Its general construction indicates that it was made for men of medium size and weight, who were used to slashing with a sword rather than using the point.

3150—A Spanish cavalry sabre made at the government arsenal at Toledo in 1879 and presumably captured by American forces during the Spanish War. The blade, though intended for use by no one more important than a private of cavalry, bears nevertheless all the characteristics of the famous Toledo steel and workmanship

3151—AGerman made sabre, by Henry Becker of Solingen. It bears neither date, government insignia, nor arsenal marks but belongs to the period of 1860-1880. Presumably brought to this country by either the Union or Confederate government during the period of enormous prosperity for European armorers when the two governments were buying everything on which they could lay their hands, not only for their own equipment. but for the purpose of keeping the weapons out of the hands of the enemy.

3152—A United States cavalry sabre dated 1863 and made by Roby, of West Chelmsford, Mass., who shared in the great contracts of 1862-3-4 for the equipment of the Union Army.

3153—A French cuirassier sabre of the Second Empire, dated 1870 and may have seen the fall of Napoleon III at Sedan. The weapon is typical of the French national instinct and of the type of cavalry for which it was intended. Of exceptional length and weight, it is very evidently intended for the use of an unusually large man on a heavy horse. Neither edge is of any great use, while the point is extremely sharp and the blade widens backward from the point very gradually, giving an almost incredible piercing power.

3154—Old Spanish sword blade and pommel from battle field of Pinos Altos near Silver City, New Mexico. When new the blade unquestionably had a cross guard of light metal which has since disappeared. Both edges were sharp and it could be used for both cutting and thrusting. On one side of the blade is engraved IOANNES, and on the other D GLAORIA. The Ioannes may indicate either bad knowledge of Latin on the part of the sword cutler, a theory which the other inscription would bear out, or that the maker was of Dutch or Flemish origin, the latter of which is a very strong possibility, as Spain held the Netherlands for a number of years at the time when America was discovered, and Spanish soldiers were by no means slow to take advantage of the opportunity to buy the wares of the Flemish armorers, especially the swords, and to learn the extraordinary methods of the Flemish masters of fence who attacked opponents and defended themselves according to the rules of geometry.

3155—A Navy cutlass which bears no government or arsenal marks. It may be Confederate Government, blockade runner, or neither. The blade while curved, is very light for the service for which it was intended and the shell guard which has been riveted on to the knuckle bow is very evidently an afterthought.

3156—A composite weapon of which the blade is of an old rapier pattern and the hilt and guard much more modern. There are no marks to judge accurately of the age of the blade, but the pattern goes back to the sixteenth century. As it stands it may very well have been prepared for use in the Civil War by some southern officer, as many of this class are.

3157—A cutlass of the United States Navy dated 1845 and made by Nathaniel P. Ames (who was one of the famous Ames family of sword cutlers, the best known of that profession in America) at his factory at Springfield, Mass. The design of this cutlass is something unusual,

the blade being shorter and straighter, hence offering less opportunity for cutting, and the hand guard being far more open than any cutlass issued in the American service either before or after this period.

3158—A machete, or cane knife, favorite weapon of the Cuban Revolution. This weapon is of European manufacture and may have been used by the Spaniards or furnished by Spanish landholders to their Cuban dependents who later rebelled.

3159—A hand made piece of somewhat unusual design. The character of the horn used in the grip, the balance and weight, and the design of the blade make it seem probable that the piece is of Filipino origin. Swords of this sort were made for officers of the Katipunan in the country districts.

3160—Another machete of different type, home made, for use in cutting heavy brush.

3161—A home made side arm sword, of which the blade is far older than the hilt. Origin uncertain.

3162—A sword bayonet without distinguishing marks, the pattern of the American Civil War period, made particularly famous by being first used by Duryea's Zouaves.

3163—A duplicate of 3162.

3164—Dagger. Origin uncertain, as there are no maker's marks. The blade is much older than the hilt.

3165—Old hunting dagger of European make. The hunting dagger was used for the purpose of cutting the throat of large game the hounds had run down.

3166—Dagger, origin uncertain.

3167—Ancient Spanish military dagger, or possibly a plug bayonet, there being little difference between the two, as the plug bayonet, the earliest type of that weapon, was simply a dagger with the hilt made so as to fit the muzzle of the soldier's weapon.

3168—A home made side arm sword, probably of Filipino workmanship. The grip is unusal, being made of rings of leather placed one upon another.

3169—Intrenching tool, United States Infantry, period 1870-1900.

3170—Hunting knife, U. S. Army, issued to troops on western stations and other sections where large game is plentiful.

3171—Home made bowie knife.

3172—Chinese or Japanese dagger of modern workmanship, probably made for tourist trade.

3173—A Filipino bolo with wooden sheath, presumably captured during or subsequent to the Filipino Insurrection. A weapon whose clumsy appearance is extremly deceiving and has in many cases been fatally so. Its shape, while ungainly, is remarkably suited for purposes of cutting and in practiced hands is capable of entirely severing a leg or an arm, or of cleaving a skull from crown to chin at a single stroke. The construction of the sheath is also worthy of notice. Slit along the edge opposite the blade and bound together with light cord, it appears to hinder the blade greatly Many an American soldier has paid with his life for the supposition that when passing an apparently peaceful Filipino he could draw his revolver before the Filipino could draw so clumsy a weapon from so clumsy a sheath. The Filipino does not clear his blade, but draws bolo and sheath from his belt at once and strikes with the blade still in the sheath. The blade penetrates through the slit in the edge of the sheath and is absolutely unhindered by it, a curious and very uncomfortable circumstance.

3174—A United States foot artillery side arm sword made by Oak Ames at Chicopee Falls, Mass., in 1843. Copied after the sword of the Roman Legionary, it has been so altered in the process that it retains none of the virtues of the Roman sword, all of its vices, and developes a number of perfectly new vices of its own. As a weapon for the purpose of offence or defence, it is uncommonly unsuitable. As a piece of sword cutlery, however, it is a work of remarkable excellence. In spite of its date, and the fact that certain units of the foot artillery served in the Mexican War, it seems improbable that this particular weapon has ever seen campaign service.

3175—Angular bayonet, U. S. Infantry, period 1860—1900. The triangular grooved blade is a survival of the French type of plug dagger, the poniard, and is also the type of blade found in the small sword of the eighteenth century. The piece in question is undated, but the locking ring which fixed the bayonet firmly to the rifle and prevented its being loosened or removed by a sabre cut from a skillful cavalryman, assigns it definitely to the period subsequent to 1850.

3176—Japanese short sword or dagger, also called "second sword." An especial favorite with the people for the purpose of hari-kiri.

3177—Spanish musician's sword. Issued to members of bands in the Spanish army, probably captured during the Spanish War. Number 2 on the guard probably indicates its issue to members of the band of the 2d regiment of Infantry. This weapon, or so called weapon, represents the last stage of degredation of the type of sword represented by number 3154. It is from the point of view of a collector the same type, with the balance gone, the edges gone, the hilt so short as to prevent proper gripping, the cross guard so short and so thin as to offer practically no defense and the blade without temper worthy of consideration. It is of value purely as an ornament. To send a man out to defend himself, armed with such a weapon, would be nothing less than murder. Its ancestor. 3154, possessed most of the qualities which should be demanded of a sword which is required to protect the life of its owner. No. 3177 possesses none of them. The only point which can be mentioned in its favor is that musicians to whom such swords were issued were supposed to be non combatant in time of war.

3178—Old knife blade, hand forged, origin uncertain.

PART II--PISTOLS.

3071—A double barrelled percussion lock carriage pistol of shotgun type. The workmanship, which is French, is very excellent, the barrels being of twisted steel instead of iron. The stock is of rosewood. There is a cap box in the butt.

3072—A double barrelled percussion lock travelling or carriage pistol. It has Damascus barrels and the ornamented cap box in the butt still contains several caps. This weapon is an excellent example of the gunsmith's art, being perfectly finished in every respect.

3073—An American "pepperbox" percussion lock revolving pistol, an ancestor of the revolver, and logically the next step after the double barrelled pistol in acquiring a multiplicity of shots from one weapon. For the action and effectiveness of the weapon see Mark Twain's tribute in "Roughing It." It was commonly said that the best way to injure an opponent with one

of these weapons was to throw it at him. This weapon is double action and was made by A. W. Spies.

3074—A hammerless pepperbox pistol made by J. R. Cooper.

3075—A double action pepperbox pistol, percussion lock, made at London, England.

3076—Highly decorated revolver marked "BRITISH BULL-DOG," though there are no distinctive marks of British manufacture.

3077—"Colt's House Pistol," 44 caliber, four shot, and of very odd design.

3078—Double barrelled derringer made by the American Arms Co., Boston, Mass., under the Wierles patent, June 30, 1860. Manufacturer's number 4446. The barrels are fired separately, lower barrel being revolved into place by hand. Each barrel has its own sight.

3079—A Sharp's four barrel pistol, holding four 32 caliber rim fire cartridges which are discharged in series by a firing lug which revolves upon the face of the hammer

3080—A "SOUTHERNER" 45 caliber derringer pistol. The barrel swings to the right to load.

3081—22 caliber derringer pistol sold for ladies use.

3082—Another Sharp's four barrel pistol, same as number 3079 except the caliber is 22.

3083—An American made percussion lock derringer. This weapon was an especial favorite with gamblers, assassins, and other undesirable characters, because of the ease with which it could be concealed, its terrific shocking power, and its extreme adaptability to close range work. The assassination of Abraham Lincoln was accomplished with a weapon of this type, and the German "Kamerad pistol" as used in the late war is said to have been derived from it.

3084—Williamson's patent 44 caliber derringer, for center fire cartridge. The barrel, when released by pressure on lug underneath, slides forward to permit loading.

3085—A 32 caliber, single action, rim fire saloon pistol made by Bacon & Co., Norwich, Conn., the barrel swinging to the side to load.

3086—A pinfire revolver of about 5mm. made by Lepage Brothers of Paris, manufacturers number 5962.

3087—A double barrelled percussion lock pocket pistol, made

at Liege. Each barrel unscrews to load or clean, and both were originally chased with silver, although most of the design is now worn off At a range greater than a few feet, as the barrels are not parallel, and consequently permit only the vaguest sort of sighting, this weapon was probably of very little use.

3088—A percussion lock pistol made at the Royal Arsenal at Mutzig, Germany. It is of the type commonly used by officers as a pocket pistol; has seen hard usage and been repaired extensively. The fact that it was used as a pocket pistol suggests the difference in costume between the present time and the date of making the pistol, as the modern pocket would hardly hold one half the size.

3089—Allen's patent pepperbox, manufactured by Allen & Thurber, Worcester. The barrel is of cast steel; the neck of the butt is sheathed with steel, which is engraved.

3090—A Lefaucheaux patent pinfire revolver, about 9mm.

3091—A Sharp's breech loading percussion lock pistol, intended for private use. The maker, C. Sharp of Philadelphia, was the manufacturer also of the famous Sharp's Rifles and Carbines and the action of the pistol is the same as that of the larger weapons, the breech-block being lowered by operating the trigger guard as a lever.

3092—A flint lock horse pistol made at Liege, Belgium, date uncertain. Probably intended for private use.

3093—A flint lock horse pistol of uncertain origin but probably American.

3094—A percussion lock horseman's pistol of French make with ingenious safety catch. This is evidently a military weapon.

3095—Colt's single action percussion lock revolver with engraved cylinder.

3096—A percussion lock horse pistol made at Liege and of a military pattern though bearing no distinguishable marks of government acceptance.

3097—Henry's "Volcanic Arms Company" Magazine Pistol, made in New Haven, Conn., the invention of Henry himself, who invented in addition the Henry rifle and a highly successful rim fire cartridge, his patents being taken over by the Winchester Company. The present specimen of his work is self cocking and shoots a center fire cartridge. It is charged by slid-

ing the magazine spring up into the segment under the muzzle, swinging the segment, and dropping the cartridges down the tube. The piece is loaded by working the trigger guard, which has nearly the same action as a Winchester rifle of the model of 1894.

3098—A Colt 36 caliber revolver.

3099—Werder Lighting Pistol, an Austrian military weapon, single shot, center fire cartridge of caliber about 9mm. The piece is loaded by touching the small lever in front of the trigger guard, at which the breech block falls and exposes the chamber. Cocking the piece returns the breech to the firing position. Carbines were made under the Werder patents and proved very successful.

3100—A Remington Patent 1858, 36 caliber revolver.

3101—A Savage self cocking percussion lock revolver with initials H. L. W. on the butt. This was not, properly speaking, a double action gun but was cocked by pulling on large lever in trigger guard and fired by pulling on trigger proper.

3102—A Colt's Navy Patent 1850.

3103—A Starr patent 1856 double action percussion lock revolver. This is the first of the double action percussion revolvers and was issued, with the Colt single action, to the Union forces in the Civil War.

3104—A Remington 50 caliber single action pistol, single shot, for center fire cartridges, patent 1868 and issued to the United States Navy. The action is the same as that of the famous Remington Ryder rifle.

3105—A Remington Navy Revolver. Patent 1858. The rammer is missing. It is interesting to note in the previous percussion revolvers the presence of this rammer, which was used to set a conical bullet on top of a fixed charge of powder put up in a paper cartridge. This rammer was the invention of Col. Walker, at one time a partner of Col. Samuel P. Colt.

3106—A Colt 36 caliber revolver altered to shoot center fire metallic cartridges by the same process as used upon the Colt revolver numbered 3109. Manufacturer's number 156710.

3107—A Remington 44 caliber, single action, center fire revolver. This appears to have been made over from a percussion lock piece but there is no definite proof.

3108—Le Mat Patent percussion lock revolver with barrels, of which the upper was rifled and took the bullets from the cylinder while the lower was smooth bore of large caliber and was loaded with buck shot for use at close range, the change from one barrel to another being effected by tipping the striking face of the hammer, which is pivoted, into a steeper downward angle so as to strike the cap of the second barrel. This type of weapon was a great favorite with Southern officers during the Civil War. This type of revolving weapon with a shot gun barrel attached was invented by Dr., afterward Col., Alexandre Francois Le Mat, of New Orleans, and patented in 1856. Both rifles and revolvers were made on this patent. The majority of weapons on this system were produced in France and Belgium, though some were made in Louisiana for sporting purposes before the Civil War. After the War the Le Mat patent weapons had great favor in Europe and were adapted for metallic cartridges. For some reason, however, they never attained great popularity in the United States

3109—A Colt's revolver, originally percussion lock of the patent of 1850, altered to shoot metallic cartridges by cutting off the rear of the cylinder, brazing a block to the frame to fill the space thus made, and brazing a lug onto the original hammer to explode center fire cartridges. No. 159710.

3110—Two percussion lock dragoon pistols in saddle holsters.

3111—Though not a pair—as is proved by their having been accepted by different government inspectors—both were made by Inman Johnson of Middletown, Conn., and accepted by the U. S. government in 1835, presumably the year of their manufacture. It is interesting to note by the cartridge holders under the flaps of the holsters that these pistols were definitely intended for fixed ammunition. They were intended to be loaded with a paper or cloth cartridge instead of being loaded by pouring in powder from a horn, ramming a wad on top of it, then ramming in a bullet, and on top of this a second wad, the common method of muzzle loading weapons. The ramrods on swivels were especially intended for mounted use, the swivels being introduced for reloading while still attaching the rod to the pistol. This was to prevent the dropping of the rod and its consequent loss to mounted men.

3112—A Smith and Wesson 38 caliber single action, rim fire

revolver of early but indistinguishable date. To load the piece the barrel is released at the bottom and swung up on a hinge and the cylinder removed. Manufacturer's No. 37755.

3113—A pinfire revolver, about 9mm., made at Liege, Belgium. The pinfire antedated the rim fire metallic cartridge by a few years in Europe, but was little used in the United States. The igniting charge, instead of being placed in the cartridge, was placed in a small copper tube which stuck out at right angles from the base of the cartridge and passed in the revolver through a slit in the side of a chamber. Manufacturers number 3260.

3114—An English double action, center fire revolver, with an odd safety on the left hand side, which not only prevents explosion of a cartridge by a pull on the trigger, but also keeps the hammer from resting on a cartridge. No. 30730. Manufactured by B. Webley & Son, London.

3115—"The American," 38 caliber, double action, center fire, which cannot be used as a single action because of the peculiarly shaped hammer, so designed to prevent catching in the pocket. This weapon, together with numbers 3118, 3116 and 3117, presents an excellent exposition of the cheap American-made revolver, which has been the mainstay of crimes of violence in the Eastern states as well as a most fruitful source of accident.

3116—"The American," 38 caliber, double action, center fire.

3117—An "American Bulldog," 45 caliber, double action, center fire revolver, a type in high favor with the gangster, burglar and "safe blower" from 1870 till the advent of the automatic.

3118—A 22 caliber, single action, rim fire revolver made by the U. S. Pistol Company.

3119—A 44 caliber, rim fire, single action pistol, made by the Connecticut Arms Company. The breech-loading action is peculiar in that the large and solid breech block swings to the left on being released by pressure on the stud that serves as a rear sight.

3120—A 5mm. pin fire revolver made at Liege.

3121—A revolver, single action, percussion lock, of Ames patent 1858, and manufactured by Remington.

3122—A Remington revolver, patent 1858, with blued finish, in hand made, hand carved holster. No doubt this

weapon played its part in the winning of the West, as did many more of the revolvers in this percussion lock group, which saw service between 1850 and 1870.

PART III--WEAPONS FIRED FROM THE SHOULDER.

The Borrowdale Collection shows particularly well the development of fire arms, besides including a rather considerable series of weapons used in the American Revolution and of breech loading carbines in the Civil War, presenting a rather considerable history of the development of fire arms in America.

3000—An English "Crown and Tower" "Queen's Arm," originally issued in the reign of Queen Anne from the arsenal in the Tower of London, though made at Birmingham. The weapon was issued for Government service, and was, during or subsequent to 1813, again sent to the factories at Birmingham and reissued for service. This gun is of interest for a number of reasons. It is, in the first place, the first example in this collection of the ordinary type of flint lock, commonly called the Snap Haunce. The word and the type of lock have an interesting derivation, the word being anglicized from the Dutch "Snaap Haans," which translated means "chicken thief." The lock is reported to have been the invention of Dutch chicken thieves whose unlawful expeditions carried on chiefly at night demanded weapons of offense or defense, as the case might be. The Dutch householder could with perfect convenience use a match lock. The chicken thief, however, could not, because the glow of the match in the dark most accurately betrayed his presence. Consequently he applied the principle of the flint and steel, which he had for years used for the purpose of lighting his fire, to explode his musket, a principle which has been applied to fire arm locks from his day to the present, when flint lock weapons are still manufactured for trade with the natives of Africa and other isolated sections where the flint lock, with loose ammunition, is still the most convenient form of fire arm.

As a military weapon the "Queen's Arm" was most unsatisfactory for a number of reasons. First, the fact that it was not rifled and shot a round ball cut its accuracy down to zero at anything more than a hundred yards. Again, after a very few shots, five at most, pro-

vided the weather was fairly dry, the barrel became so fouled as to make it necessary for the soldier to stop and clean his weapon. Two shots a minute was extremly rapid fire for the Queen's Arm, and to speak of aimed shots in connection with this weapon would be decidedly inaccurate, as the soldier was not required to aim. He was required merely to hold his piece horizontally, that is, parallel to the ground, point the muzzle toward the enemy, and fire at the word of command. The Queen's Arm, while theorotically a standard caliber, 60, actually varied exceedingly, due to the practice in making them by wrapping a flat sheet of iron around a mandrel, which produced numerous inaccuracies in the barrel, which if the barrel was not rifled removed any semblance of accuracy it might have had. Curiously, however, when opposed to an enemy armed with a similar or inferior weapon, the Queen's Arm was very fairly successful, due to the fact that if the enemy was not armed with a weapon capable of outranging the Queen's Arm the favorite practice of officers of the day was to approach within a range of a hundred feet or less, fire a volley, and charge with the bayonet. The huge ball of the Queen's Arm propelled by a large charge of slow powder, possessed a terrible shocking power, so that having upset the morale of the enemy by a volley, victory with the bayonet was usually comparatively easy

3001—A pill lock cadet musket, Prussian manufacture. The pill lock had a short period of existence between the flint and the percussion cap locks, a pill of fulminate being placed in the pan, which was opened by raising the firing pin block, and explosion secured by the firing pin striking the pill when itself struck by the hammer. Both the pill and the percussion locks are chiefly due to the efforts of a sporting parson in Scotland, one Wm. Forsyth.

3002—"Kentucky" carbine, magazine weapon and rifled. Made by the Meriden Arms and Mfg. Co., Meriden, Conn., under patents of Tripler and Scott, 1864. Magazine is in the butt, is loaded from the left hand side of the receiver block in front of the trigger guard, and will hold six 45 rim fire cartridges. To load the chamber the barrel is released by pressure on catch to left of hammer and the barrel is turned to the right through three-quarters of a circle till chamber comes opposite magazine.

3003—A Colt's revolving carbine of 1848, which was merely an enlargement of Colt's Revolving Dragoon Pistol of

the same period. The Colt's revolving carbine while successful to a certain degree, was not in the least enthusiastically received by troops who were armed with it, as the gap between cylinder and barrel was large enough to permit the escape of considerable fire and also, due to thinness of the chamber walls and overheating, this weapon had a habit of occasionally exploding all six chambers at once, which was usually disastrous to the shooter.

3004—Remington Revolving Carbine, modeled after Colt's Revolving Carbine, but for rim fire cartridges.

3005—A percussion lock fowling piece altered from flint musket. The walnut stock is of American workmanship, the barrel uncertain, and the lock English.

3006—A Harper's Ferry percussion lock musket of 1852, barrel finished in brown. Extra nipple was found in the cap box of this weapon.

3007—A "National Rifle," D. Williamson's patent, made by National Arms Co., Brooklyn, N. Y. Trigger guard acts as the lever and the breech block slides backward and forward.

3008—A curious double barrelled rifle made by W. E. Robbins. The barrels are placed one above the other and are fired simultaneously if both hammers are cocked, or singly by cocking only one hammer at a time. Pulling the set trigger not only sets the firing trigger but permits the cocking of the hammer. The firing trigger is set to a hair.

3009—Replica of a wheellock gun, such as was used in the period from 1500 to 1600 The gun was loaded at the muzzle and the charge rammed down, the sliding lid of the pan was drawn back and the weapon primed. The powerful spring which backed the wheel was wound by a key, seen attached in this example, and the trigger was pulled. On the pulling of the trigger the hammer came down, forcing the flint against the grooved wheel, which was revolved rapidly by the spring behind it, and a shower of sparks was thus thrown into the pan, where the priming communicated the fire to the charge in the barrel, the whole operation consuming several seconds after the trigger was pulled. This replica lacks a feature generally found in the genuine pieces, namely, an iron "fence" an inch or more in height placed on the rear edge of the pan to protect the face of the shooter from sparks thrown out by the revolving wheel. These weapons were extremely

expensive and usually the property of kings and noblemen. During the massacre of St. Bartholomew, Charles of France is supposed to have assisted in the slaughter of his Protestant subjects, using a weapon of this type.

3010—A Chinese Matchlock, the earliest type of firearm, used by the Chinese several centuries before a knowledge of gunpowder was acquired by Europeans. The weapon was loaded from the muzzle with powder and ball, a pan on the right hand side of the piece was primed with fine powder and covered by the swinging cover which is hinged to it. The gun was tilted on its left side and tapped smartly to jar powder from the pan into the barrel. A small match or fuse made of tarred or chemically treated rope was run from a groove in the hammer through holes in the stock and carried in the left hand. When ready to fire, match was blown into a coal and the cover of the pan was swung open. The trigger was pulled and the match forced into the powder in the pan, which communicated the flash into the barrel and exploded the piece. The matchlock was rather more effective for disturbing the enemy's nerves than for injuring his body, though at close range it was and still is falrly effective as a weapon.

3011—A Hessian rifle of the type used by Hessian mercenaries in the Revolution. This piece still has the original sling strap as well as a sword bayonet with its sheath and shoulder sling. Note the large box in the right hand side of the butt, in which spare flints were carried. The Hessian rifle was a weapon much prized by the British authorities and special prices were paid for Hessians who possessed rifles, there being no rifles of government issue. These Hessian riflemen were formed into a company under George Hanger, later Baron Coleraine, and were for a time the pride of the British service until the majority of them were captured at Bennington. The Hessian rifle is unquestionably the worst, as it is the first of the flint lock rifles. Its extremely short barrel had two disadvantages. First, much of the charge of powder did not burn inside of the gun and was wasted. Second, the sights were set so close together as to make the slightest disturbance of the barrel disturb the aim very seriously Also, the ball of of the Hessian rifle was much larger than the bore of the rifle and was first inserted in the muzzle, which was slightly enlarged, then seated with a short steel rod and a wooden mallet the process of jamming the ball down on top of the powder, so deforming the ball by the time it rested on the wad as to make it very nearly useless so far as any gain in accuracy in rifling was con-

cerned. Third, the Hessian rifle, because of its light weight and large charge of powder, kicked most ferociously and was inclined to cause even the most determined and experienced shooter to flinch after the first few discharges. During the Revolution there was developed by Major Ferguson, of the British army, a breech loading flint lock rifle which for rapidity of fire was infinitely superior to anything then available and for accuracy compared very favorably with the American rifles; but fortunately for the American cause, the British government continued to prefer the hopelessly inadequate Hessian rifle.

3012—An American flint lock rifle with half stock, of large caliber, presumably made by a Pennsylvania gunsmith of the pre-Revolutionary period, though unmarked. Though originated and to a large extent made in Pennsylvania, these rifles are known as the Kentucky rifles and are the weapon with which the Revolution was to all intents and purposes won. They played moreover no inconsiderable part in the victory of Wolfe on the Plains of Abraham, and had an enormous influence in the winning of the territory between the Appalachian Mountains and the Mississippi River. The "Kentuck" was practically never a standardized weapon, but was made to the order of individuals by local gunsmiths, each man having his gun made with length of barrel and depth and twist of rifling to suit his own preference. Distinguishing characteristics of the Kentucky which not only identified the type but were the determining causes of its points of superiority were: 1. Its length of barrel, which allowed the complete combustion of the powder charge and caused the barrel to swing very slowly and to remain unagitated by slight tremors on the part of the shooter and which brought the sights far apart, thus offering small deviation of aim for relatively great shifting of sights. The very thick barrel of the Kentucky permitted occasional very heavy charges of powder without danger of bursting, reduced the force of recoil very considerably, aided steadiness of aiming, and by reduced vibration cut down considerably the noise of the shot, which was of great importance in territory where the slightest sign of his presence was likely to draw down on the white man any number of hostile Indians. During the Revolution the "Kentuck" played a part of enormous importance which may be illustrated by a number of incidents. A company of riflemen from Virginia coming to Boston during the siege of that city by Washington, General Washington ordered a

special exhibition, not only for the benefit of his own troops, but also for that of the British, whose spies in his camp he very carefully allowed to be present. The remarkable exhibitions of the Virginians, among them the cutting in two of a pole by rifle fire at a distance of a hundred yards, and the shooting of a shilling from between a man's fingers at a distance of fifty yards, so astonished General Gage that he felt that a report of it to the authorities in England, supported only by his word, would not be believed. Wherefore he took special pains to capture an American armed with the rifle and send him to England, where he gave a number of exhibitions, which not only caused Gage to be believed, but had a serious effect on recruiting in England for the American campaign. Another occasion of great distress to the British was the feat of an American rifleman who, singlehanded, comfortably posted on a hill near the harbor, proceeded to kill or disable some twenty Britishers who were out on the harbor in a barge. He was all the time in plain sight and they made furious attempts to dispose of him with their smooth bore muskets, but his piece was so superior to theirs that he disposed of all of them before they were able to get within range. One of the reasons for the rapidity of his fire, it may be mentioned, was another quality of excellence in the "Kentuck," namely, the greased patch. These greased patches of cloth or leather were carried in a socket or hollow in the butt of the gun which was covered by a metal trap. After having poured in his powder charge the rifleman laid a greased patch on the muzzle of his gun, placed a ball upon the greased patch, and setting the hollowed end of his ramrod against the ball, drove ball and patch together down the barrel of the weapon with a single motion of the arm, the patch not only aiding the progress of the ball, but also removing all fouling from the previous shot. One of the most important single instances of the services of the "Kentuck" in the Revolution occurred at the battle of Freeman's Farm, commonly called Saratoga. Here the British were under command of General Fraser of the ancient Scotch family of the Frasers of Lovat, unquestionably the most able of the officers under Burgoyne's command, and far more able, in fact, than Burgoyne himself, his inferior rank being due chiefly to the political sins of his family. Under his direction the battle was proceeding very unfavorably to the Americans, when he was observed by Colonel, later General Daniel Morgan, in command of Morgan's Rifle Regiment, composed of picked men from the backwoods of Virginia and Ken-

tucky Calling to him one Timothy Murphy, one of the best shots in his regiment, who was possessed of a double barrelled flint lock rifle, Morgan pointed Fraser out and made it Murphy's one duty for the rest of the engagement to dispose of Fraser. Murphy climbed a tree and secured a steady aim at Fraser, who was on exposed ground, but theoretically beyond even rifle range. His first two shots cut Fraser's bridle rein close to his fingers and killed an aide who was riding beside him. Fraser, however, either supposed the shots to be accidentally close or considered that his personal honor demanded that he should not withdraw. Murphy fired the third time and Fraser was struck in the breast, a wound of which he died before the next morning. Due partially to his absence from command, and partially to the dismay caused by his fall, the British army was defeated at Freeman's Farm. After his death it was again defeated at Saratoga, Burgoyne, without Fraser's aid, being hopelessly muddled. His surrender followed, and due to his surrender America secured definitely French aid, which is a far cry from Timothy Murphy and his double barrelled rifle, but nevertheless was very much a consequence.

3013—A percussion lock carriage blunderbuss with carved
3014 leather holster, (number 3014). Piece is of French make, barrel made of twisted steel bands and the stock elaborately carved.

3015—A Maynard patent percussion lock musket made at Springfield in 1859. This weapon is the invention of a doctor, and carried a roll of paper under the flap on the lock plate in which at even distances were placed charges of fulminate to act as caps. These caps were fed to the nipple automatically by the cocking of the hammer.

3016—Sharp's breech loading percussion lock carbine equipped with Lawrence's patent capping device, which consisted of a plunger actuated by a spring, which may be seen through a slot in the lock plate forward of the hammer. The plunger and spring could be removed by drawing a screw at the bottom of the lock plate, and the passage loaded by inserting a tube which contained the caps, and replacing the plunger and spring. The caps, which were in the form of small disks, were automatically fed to the nipple by the cocking of the hammer.

3017—Lindsey's patent 1860, 58 caliber, two shots from one barrel, the ball of the first charge acting as a breech block for the second. Two hammers and nippels, but one trigger, bayonet attached. According to Charles Winthrop Sawyer, the Lindsey rifle was invented as a result of the death of the brother of the inventor in an Indian raid, the Indians waiting until the whites had fired and then charging in before they could reload. Lindsey thereupon determined to invent a piece which should fire two shots and have the appearance of a single-loader. The basic principal of the invention, that is, two superposed charges, was old, though probably unknown to Lindsey, and was but little more sucessful in his weapon than in previous ones, its great disadvantage being that it frequently fired both charges at once, and while few cases are on record of the barrel being burst by this misfortune still the effect upon the nerves of the shooter was more than considerable, and the weapon having gotten a bad reputation was withdrawn from army issue.

3018—A percussion musket made by Remington in 1863 on contract with Federal Government, as was the sword bayonet with sheath, which is attached.

3019—A flint musket of 1831 made at the arsenal at Harper's Ferry where the system of standardized interchangeable musket parts was first put into practice about this time.

3020—J. H. Hall's patent, breech loading flint lock rifle with bayonet. This piece, dated from Harper's Ferry, 1839, is a beautiful example of American gunsmith work and inventive ability. The breech block is thrown up by pressure on the lever in front of trigger guard and dropped back into place by pressure of the thumb. The piece was capable of being used as a muzzle loader should the breech mechanism fail to function. The Hall breech loading principal was afterwards applied to percussion-lock weapons. The breech-loading flint lock was used not only in the Mexican War but even as late as the Civil War.

3021—A Hungarian or Rumanian percussion musket marked Pirko in Wifn.

3022—J. H. Merril, Baltimore, patent breech-loading musket. The flap on the top of the breech rises and exposes the chamber, into which the cloth is dropped

and shoved home by an inside rammer attached to the breech block.

3023—Green's patent breech loading, bolt action, percussion lock rifle, patented 1857, a successful Civil War weapon. The hammer is under the barrel, in front of the trigger guard, the bolt released by a lug on the tang just behind it. 56 caliber. Original bayonet attached. This piece is so unusual in its conception, that is, unusual for the period in which it was invented, that it deserves to be placed with more modern rifles.

3024—Remington military rifle, with no date, no government marks. May possibly have been made for Cuban or other Spanish-American revolutionists, as this type was a great favorite with would-be as well as established governments.

3025—A Harper's Ferry percussion lock musket of 1823 with bayonet.

3026—U. S. Springfield Arsenal rifle, with bayonet, made 1864. Same action as number 3029.

3027—Chaffee-Reece repeating rifle. Made at Government Arsenal at Springfield 1884. The magazine is in the butt, cartridges raised by bolt action. The trowel bayonet attached was intended for use both as bayonet and intrenching tool.

3028—Remington Ryder 45 caliber, single shot rifle, made at Springfield Arsenal 1870 for use of U. S. Navy.

3029—U. S. Springfield rifle, Springfield Arsenal, 1863. The breech block rises and drops forward over the barrel when catch is tripped.

3030—A German or Austrian walking stick gun with percussion lock. A type much favored by the revolutionists of 1848 as a means of going armed and of keeping arms in spite of the vigilance of the Prussian spies.

3031—An old-fashioned turkey gun altered from flint to percussion lock, of large caliber and great weight, used for long ranged shooting only. It attained with accuracy ranges which in a muzzle-loading piece seem incredible to us, at least one case being definitely known where a rifle of this type shot with accuracy to a distance of over a mile. The pieces of this type were not fired from the shoulder in the ordinary

fashion, but were fired from a rest, usually a wooden bench. The present piece has a set-trigger and unusual rear sight; the percussion lock is by Partridge and the barrel by an unknown maker. The barrel is cut for a false muzzle which was put on while loading to prevent injury of the grooves of the rifling at the true muzzle and removed before shooting.

3032—A Chesapeake Bay duck gun altered from flint. The bore is a trifle over an inch and the barrel is very heavy and specially reinforced at the breech to stand the strain of very large charges of powder. This piece was probably seldom fired from the shoulder but from a rest on either the gunwale of the boat or a swivel mounted in the bow.

3033—Percussion lock rifle altered from flint. The new lock is by H. Elwell, but the stock and barrel show work of early American flint gunmakers. The piece has set triggers and has been repaired with leather in front of the lock.

3034—A fowling piece made from an old English musket barrel. The percussion lock is by Heaton.

3035—A German fowling piece made by Oeffer at Essen.

3036—An English double barrelled fowling piece by W. and C. Scott and Son, London. Both barrels are still charged.

3037—An American double barrelled fowling piece by Blunt, N. Y.

3038—An English double barrelled fowling piece by Perkins, London, which has seen hard use but is still serviceable. The tops are broken from both hammers and the stock has been repaired with wire.

3039—A French double barrelled fowling piece by P. F. Clandin, Paris.

3040—A percussion lock dragoon carbine made at Harper's Ferry, 1847.

3041—A Sharp and Lawrence carbine for sharpshooters' use with set trigger and special front sight, stock missing.

3042—A British Government musket of 1857 marked V. R. (Victoria Regina) which has been altered to a shotgun by cutting down the forestock.

About the year 1850 the demand was rapidly growing for improvements in firearms. There were particularly

in demand for military use a repeating rifle or at least a multiple shot rifle, and also a type of rifle in which the intelligence of the soldier would be called upon as little as possible for operation. That this last demand was justified is proven by the fact that after the battle of Gettysburg some 12,000 muskets were picked up which contained anywhere from two charges to a number sufficient to fill the barrel from breech to muzzle and all unexploded, due to the fact that some soldier in his excitement had kept on ramming charges down the barrel, pointing his piece at the enemy and snapping the lock without ever placing a percussion cap on the nipple. Various devices were invented for the purpose of automatically capping a percussion lock piece. A number of breech loading percussion lock weapons were invented whereby the soldier upon attempting to reload knew instantly whether or not his previous charge had been fired, but even with these much time was lost by failure to cap the nipple. The breech loading metallic cartridge weapon was the only genuine solution to the problem which was disturbing the practical inventors, and this they finally attained after a series of experimental pieces, which is aptly represented in the Borrowdale Collection.

3043—Burnside Carbine, made by Burnside Rifle Co., Providence, R. I., caliber 54, percussion lock, but equipped with special metallic cartridge By pressing the catch and pulling down on the trigger guard the breech block drops back in a quarter circle exposing a chamber in the block. The piece is initialed J. M. B.

3044—Smith's patent breech loading carbine, made by Poultney and Trimble, Baltimore, Md., 50 caliber. At pressure on catch in front of trigger the weapon breaks like a shotgun.

3045—Starr's patent breech loading carbine, caliber 50. Trigger guard acts as lever, pulling down breech block, which is made in two parts of which one drops straight down, the other falling backward upon it in a quarter circle. Percussion lock.

3046—Gwynn and Campbell's patent breech loading carbine, called also the Union carbine, the Campbell carbine, the Grapevine carbine and the Cosmopolitan carbine. The breech block slides down backward, actuated by trigger guard as lever. Dated 1862.

3047—Sharp and Hankins, Philadelphia, cavalry carbine, 50

caliber. Trigger guard acts as lever, throwing the barrel straight forward.

3048—Sharp and Lawrence cavalry carbine, patent 1852, for metallic cartridges.

3049—Sharp and Hankins carbine, duplicate of 3047.

3050—Duplicate of number 3048.

3051—Duplicate of number 3048.

3052—Duplicate of number 3048. Note: It is peculiarly appropriate that a Sharp's carbine should have so many duplicates in this collection, as the Sharps played a large part in the winning of the West, particularly the section east of the mountains between 1860 and 1875.

3053—Sharps-Borchardt patent carbine. Made at Sharp's factory at Philadelphia. Breech block action the same as Sharps action, but the piece is hammerless. 45 caliber, center fire.

3054—Ballard's patent carbine, by Merrimac Arms Co., Newburyport, Mass., 1861. Trigger guard acts as lever, breech block and hammer fall. Cartridges ejected by lever in front of trigger guard. 50 caliber.

3055—Maynard's patent carbine, trigger guard acts as lever and barrel tips up. 50 caliber.

3056—Spencer magazine carbine, 7 shot, 50 caliber, rim fire. Magazine in stock, trigger guard lever. Made by Burnside Rifle Company, Providence, R. I., model of 1863.

3057—Another Spencer carbine made by Spencer Rifle Co., Brooklyn, N. Y., model 1860, otherwise similar to 3056. The Spencer repeating carbine was more thoroughly detested by the Confederates than any other weapon used against them. One Confederate is reported by a Yankee captor as saying, "We 'uns don't care what you fellers are shooting with so long as you ain't got them damned guns you load up on Sunday and shoot the rest of the week."

3058—Remington cavalry carbine, badly worn, wood parts badly rusted, no date visible. Ryder's patent.

3059—Eli Whitney 45-60 sporting rifle, seven shot, magazine under barrel, lever action, made at Whitneyville, Conn., 1879.

3060—Evans repeating rifle, by Evans Rifle Co., Mechanic

Falls, Maine. This weapon is rather curious, with very large magazine operating by means of an Archimedean screw which is contained in the stock The hammer is in the trigger guard. to which is also attached the breech block. The flap on the right side of the gun is opened by the action of the lever, giving opportunity for use as a single loader. The Evans was never a highly successful weapon because of the great difficulty of loading. While the magazine held from 26 to 32 cartridges, depending on the model, loading the weapon was an extremely slow process and occasionally a painful one, and a further disadvantage was the very great weight of the gun when loaded.

3061—"Hunter" shot gun, about 10 gauge. Same action as French Tabatierre rifle, the breech block turning over to the right.

3062—Bullard Repeating Arms Co., Springfield, Mass., magazine sporting rifle. Complicated mechanism, is no longer operable. 40-90 caliber.

3063—Henry repeating rifle, patent 1880. Stock repaired with leather.

3064—Repeating rifle, caliber 45-70, patented by A. Burge, 1855, and barrel by G. W. Morse, 1856.

3065—Martini-Henry sporting rifle made by T. Burkett, St. Mary's Square, Birmingham, England. Single shot, about 38 caliber. The stock has been badly cracked, but the whole piece shows evidence of the very best workmanship of an English sporting gun maker.

3066—Winchester sporting rifle, model 1873, with King's improvements. Caliber 38-55.

3067—Winchester sporting rifle, model 1895, shooting 30 Government cartridge, Lyman sight.

3068—A Harper's Ferry percussion lock barrel, lock and trigger dated 1854.

3069—A U. S. Government percussion lock barrel, probably Harper's Ferry.

3070—Barrel and receiver of Henry Volcanic rifle, date undecipherable but the piece is of Civil War period, and was a great favorite among Northern sharpshooters, many of whom bought Henry rifles privately.

PART IV--MISCELLANEOUS.

3123—Brass shell, marked "Hotchkiss Patent, Paris." Made for Hotchkiss revolving cannon, one pounder, many of which were used by United States troops against the Indians in this locality.

3124—Powder flask of tin.

3125—Shot flask with stamped leather cover and device for measuring charge.

3126—Metal powder flask.

3127—Leather shot flask.

3128—Flat powder horn.

3129—Powder horn.

3130—Hand grenades of Civil War period.
3131
3132

3133—Heavy cast iron shell. The inside was filled with powder and a fuse block was screwed into the hole in which threads may be seen. It acted much as the high explosive shrapnel of the present day. This shell was made for an eighteen or twenty-four pounder. The larger hole was not made with the shell, and was also not caused by explosion but by some circumstance occurring presumably since the shell was discarded by the army.

3134—Leather cartridge case.

3135—Leather cartridge belt.

3136—White leather holster.

3137—Cartridge loading tool.

3138—Pair of old spurs.
3139

3140—Tin covered glass bottle which served as a canteen.

3141—Small wooden canteen of cheese box shape, which was much favored during the Revolution.

3142—Large wooden canteen of similar shape.

3143—Small wooden barrel shaped canteen.

3144—A native throwing spear, apparently manufactured with white man's tools. Possibly South African in origin.

3145—A pair of boarding pikes used in the days of wooden
3146 ships both for boarding an enemy vessel and in repelling his boarders. These may have been either American or British navy, but were more probably in use by privateers, as they bear no government stamp.

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